

Sink or Float

The density of mercury is 13.5 g/cm^3 . The density of water is 1.0 g/cm^3 . Using the density values given, determine whether each of the following objects will sink or float in mercury and in water. If the object floats in water, in mercury, or in both, write a plus sign (+) in the appropriate place. If the object sinks, write a minus sign (–) in the appropriate place.

Object	Density	In Mercury	In Water
Aluminum	2.7 g/cm^3		
Lead	11.3 g/cm^3		
Silver	10.5 g/cm^3		
Steel	7.8 g/cm^3		
Platinum	21.4 g/cm^3		
Oak wood	0.85 g/cm^3		
Water (ice)	0.90 g/cm^3		

CALCULATING DENSITY

1. While at the store, you bought a box of cookies. You decided that you would like to know the density of the box of cookies. The mass of the cookies is 226.8 grams. The measurements of the box are 20cm x 8cm x 14cm.

a) Find the volume of the box.

b) Find the density of the box.

2. You would like to find the density of an unusually shaped piece of jewelry. You pour 200mL of water into a 500 mL graduated cylinder. The water level rises to 278 mL when you place the jewelry in the cylinder.

a) Find the volume of the jewelry.

If the mass of the jewelry is 122 grams, find the density of the jewelry.